A brief report

National Seminar on e-Learning and e-Learning Technologies
UGC-Academic Staff College Auditorium, JNTU Campus, Hyderabad
(August 8-9, 2005)

e-Learning has become an effective methodology to impart distance education in the learning centric, self-paced learning environment. Apart from providing a single point expertise on selected topics to the learners who are networked, it can also radically change the delivery of educational services like offering courses in local languages.

As part of C-DAC's continuous endeavours in the area of e-Learning and with an objective to create a common platform for experts who are working in this area and also to evolve future strategies and to bring awareness and exposure to new trends in e-Learning, C- DAC has organized ELELTECH INDIA 2005, a 2-day National Seminar in e-Learning and e-Learning Technologies on August 8-9, 2005 at Hyderabad. The Event was organized in association with the Department of Information Technology, Ministry of Communications & Information Technology, Government of India. A number of organizations who are keenly working in this area such as Media Lab Asia, JNTU, Hyderabad, DOEACC Society (an organization of the DIT, Government of India), IT&C Department, Government of Andhra Pradesh has extended their hands in the organization of this seminar.

The Seminar was inaugurated by Prof. H. P. Dikshit, Vice Chancellor, Indira Gandhi National Open University (IGNOU), with the release of proceedings. During his thought provoking address, he recalled his experience on many aspects of many successful educational programmes and emphasized the need for training the trainers particularly when technology is rapidly changing. This is more important for India where 70% of the nation's population is deprived of effective modes of education and some of the primary schools have only one teacher, that too sharing other tasks. When we have a gigantic task of 'making education compulsory for all' which has been approved by the Parliament as a mandate, it has become important to find ways of achieving that. For this, all modes of delivery must be fully exploited. He referred in this context, to the EDUSAT programmes that have been drawn up. IT assisted learning has greater opportunities in content creation and content delivery.

Welcoming the participants to the Seminar, Shri S. Ramakrishnan, Director General, C-DAC brought out the key aspects of the Seminar and role of e-Learning as a powerful tool in the Knowledge Economy. E-Learning from its nascent levels in the 1990s grew in prominence with the internet enabled cyber-infrastructure and has now reached reasonable levels of maturity for many situations and need to be scaled up to meet composing large scale needs as in the case of shortage of qualified manpower in IT industry in relation to demand. So is the case of life-long learning, given regular changes in skill profiles demanded by the market place. It is also important mode of education to reach the outreached. He also briefed the participants about the initiatives being taken by the Ministry of Communications and Information Technology and C-DAC in the areas of e-Learning.

Shri Pankaj Agrawala, Joint Secretary to government of India and Chairman, Advisory Committee for this seminar could not attend the seminar due to some urgent official engagements. However Shri Agrawala has sent his Vision address and the same was read by Shri L. A. Namrani, Senior Director, DIT. Shri Agrawala has put the vision of e-Learning in the following lines.

"Our vision is to facilitate an environment of technology based learning and moving up the value chain in providing the learning opportunities to the unreachable through consistent efforts in solving the issues like content, connectivity, standardization and accreditation, Training of trainers, Setting up of Cost effective

Infrastructure, Platform and Environment Independent Content Creation etc. that brings a ray of hope for a better tomorrow."

Dr. B. C. Jinaga, Registrar, JNTU explained the initiatives taken by the University as well as the AP Government in using internet in their Faculty Networking Programme.

Dr. B. Krishna Murthy, Vice President, Wipro Technologies, Hyderabad gave industry perspective on the role of e-Learning drawing from Wipro's own use of e-Learning to meet the training requirements of rapidly growing annually inducted (15,000 last year) manpower. In order to stay ahead in today's competitive environment, to continuously upgrade the skills and to achieve scalability, e-Learning is a great tool. Through Wipro's 'at your place-at your pace' programme, they have launched on-line training programmes for all Wipro's employees where about 800 titles are currently available. However, the industry is facing inadequacy in good content in various domain technologies and here premier academic institutions can play a pivotal role.

Dr. S. P. Mudur, Professor of Computer Science at Concordia University, Canada well-known for his contributions to e-Learning delivered the key-note address on 'e-Learning-Prospects and Challenges'. In today's high dependency on technology, he emphasized the need for thinking ahead on the failure of communication facilities. Real life concerns are totally different from the technological concerns such as efficiency, reuse, reliability and predictability. The primary goal of every e-Learning innovation should be instructional and it should enhance learning effectiveness and experience. Faculty and student's time are critical resources and more formal approaches should be adopted for successful implementation of e-Learning.

The e-Learning Course on Cyber Security was launched on the occasion by Dr.Mudur.

Apart from academic institutions like – IITs, IISc, NITs, Gujarat Vidyapeeth, Goa University, Sri Padmavati Mahila Viswavidyalayam, Apollo's MedVarsity; IT Companies like SoftPro, Zenith Global, ICS, HardNSoft, BEL, Aditya Birla Corporate School and NGOs like Azeem Premji Foundation are also participating in this 2-day National Seminar. C-DAC, DOEACC, Media Lab Asia, Nihar Info, LMS-Portal etc. are exhibiting or demonstrating their products to that participants, faculty and students.

Dr. N. Sarat Chandra Babu, Director, C-DAC, Hyderabad delivered Vote of Thanks to the dignitaries and delegates.

Summary of Technical Sessions

Day 1 (8th Aug 2005)

Keynote I "e-Learning – Prospects and Challenges"

In this session, speaker brought out the major pedagogical, technological and evaluation issues that must be addressed in deploying the various technologies, while implementing e-Learning. Primary objective of any e-Learning solution should be to achieve human learning. Formal approaches in the form of development and evaluation methodologies have to be evolved. Speaker stressed that the objective of e-Learning is to uplift the bottom level learner

Session-I "Pedagogy and Instructional Design"

This session stressed on the use of formal models for instructional design. Instructional design needs to concentrate on transaction analysis and ego states of different types of learners. Building practical theories and

models by reflecting on our experiences and consciously pursuing a systems approach to design. Speakers stressed on the use of adaptive hypermedia techniques to improve the adaptability of e-Learning system. An important scheme that permits treating gradebooks as first class objects is covered during this session. An approach for evaluating and grading of essay questions is also presented during this session

Session-II "Content Development, Delivery and Tools"

In this session, the speakers stressed that content development requires certain pedagogical approach and clarity of thought processes and nuances best left to experts in the specified area of scientific knowledge. Speakers presented variety of technologies and e-Learning approaches for content development and delivery such as use of ICT technologies, XML technology in content modelling, multilingual technologies for local language interface and use of standards for interoperability. Speakers also touched upon content authoring tools

Session-III "e-Learning and its Societal Impact"

In this session the speaker stressed on the need for identifying and addressing the issues faced by the physically challenged learners while development and delivery of e-Learning solutions. They expressed that to promote further e-Learning in our country we need to promote public private partnership in this field to achieve the objectives bridging the digital divide through e-Learning. Members also stressed on the advancements in open source initiatives which make e-Learning more affordable.

Day - 2 (9th Aug 2005)

Keynote II "Building Quality Instructional Processes over Content for Technology Enhanced Learning"

The Speaker brought out the subtle issues in the learning processes. He also explained regarding the various Government programmes such as NPTEL whose objective is to uplift the quality of higher education. He also talked about the various instructional methodologies and importance of innovation and creativity in e-Learning solution design

Session – IV "Learning Grids and New Technologies"

Speakers brought out the recent developments in artificial intelligence, which allow course developers to incorporate the diagnostic tools, intelligent role-playing and tutoring systems into the learning process. Some of the benefits of AI techniques include real-time interaction and continuous improvement of content delivery. Use of computers in Sanskrit and Vedic processing is addressed in this session. Experiences in using VSAT for interactive distance learning is covered in this session. Usage of VPN and biometric technologies for securing e-Learning environment is also covered in this session

Session-V "Case Studies"

In this session one of the speaker shared his experiences in implementing synchronous learning through video conferencing initiated at IIT, Mumbai. Speakers stressed that the core Indic cultural competencies can be used to develop an effective and cross-culturally valid e-Learning model. Non-linearity in content sequencing enables interactive, flexible learning along with application of concepts in everyday life through features like keywords, search and explore. Advantages of using service-oriented architecture over component-based

architecture in designing e-Learning solutions is also addressed in this session. Speakers stressed the importance of psychological models while designing the e-Learning solutions.

Session – VI "Quality Assurance, Standards and Open Source Solutions"

In this session speakers stressed on the importance of making e-Learning solutions as open source solutions and presented the work carried out by them in this area. Importance of quality assurance of tools and content hosted is addressed by the speakers and expressed the importance of formal frameworks for evaluating the quality of the tools and the content. Speakers also presented their experiences in SCORM implementation process in designing cyber security course content

Panel Discussions on
"e-Learning Vision 2010 for India -Steps to Transform the Vision to Reality"

Recommendations

With an aim to strengthen e-Learning activity in the country, Department of IT has prepared a draft vision paper on e-Learning. This paper gives a brief background of e-Learning including Technologies, Challenges faced for implementation, Initiatives of DIT in the promotion of e-Learning, Future trends and Thrust areas for supporting research and development projects.

C-DAC worked on a draft Concept paper taking inputs from the Vision paper as per the directions of e-Learning division of DIT. The following is the summary of the paper. The paper covers a five layer framework consisting of existing e-learning base, issues, solutions, thrust areas, and target beneficiaries. It is proposed that training e-Learning managers, Learning grids may be added to the thrust areas in addition to the thrust areas identified in the vision paper. Importance of standards, Quality assurance of e-Learning environments was discussed. It has also proposed that some initiatives could be taken up by DIT which include Standardization, Accreditation, Content repository in the form of knowledge warehouse, and training. The paper also proposes a flexible, augmentable model for technology assisted learning (e-Learning) and an architecture for Technology assisted learning with knowledge based approach and natural interfaces.

The topic of panel discussions was "e-Learning Vision 2010 for India - Steps to Transform the Vision to Reality". It is the wish of the organizers of the seminar that the draft vision paper of DIT, draft Concept paper of C-DAC, and paper on Technology Assisted Learning would become inputs to the panel discussion session of the seminar.

Shri Ajeer Vidya, Joint Secretary & Financial Adviser, Department of IT chaired the panel discussion and the following were the members who presented their views and interacted with the audience.

- Prof. V. Ranga Rao, JNTU
- Dr. A. B. Saha, C-DAC, Kolkata
- Dr. Beerendra Singh, DOEACC, Imphal
- Dr. N. Sridhar, Sankhya Infotech
- Shri Kartik, 24x7Learning
- Dr. N. Sarat Chandra Babu, C-DAC, Hyderabad

- G.Subba Rao, Govt of AP

The recommendations of panel discussion are given below:

1. Using e-Learning in the empowerment of rural people of our country is considered important keeping in view of the non availability of teachers, quality content, access etc. Technologies used for e-Learning are already at matured stage, so importance has to be given to content and proper delivery/dissemination mechanisms. The focus has to be on content creation/ multilingual content and possible creation of knowledge base. It is important to develop content using standards such as SCORM.
2. System analysis need to be done while designing e-Learning solutions. Technologies used in e-Learning need to be standardized at National level. e-Learning tools need to be made available at reasonable prices or if necessary as Open Source tools for the Indian Context.
3. Existing National/state level infrastructure can be made use of to spread e-Learning to the nook and corner of the country. Use of Internet in schools need to be intensified. National level Learning Grid has to be setup.
4. e-Learning workshops/exhibitions can be organized where people from public/private can participate and the solutions can be evaluated
5. A National body of e-Learning practitioners has to be formulated to arrive at e-Learning solutions standards, which helps to address the issues like interoperability. Practitioners need to work together to implement vision 2010. Long term and short term goals have to be setup to achieve vision 2010 for e-Learning
6. National level projects need to be initiated to train teachers in content development. e-Learning need to be introduced as part of B.ed (Bachelor of Education) curriculum. Industry – Academia collaborations need to be strengthened. Conduction of vocational courses needs to be given importance.
7. Effectiveness of training has to be given importance while designing and implementing e-Learning. Formal models have to used while designing e-Learning solutions.
8. Cultural heritage of our country can be safeguarded and also can be made available at International level by converting it to e-Learning mode of access

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